

**WE CLAIM:**

1. A computer-implemented method for monitoring processing of and response to error alerts, the error alerts being created during package distribution on a computer network comprising a plurality of network devices linked by communication pathways and including information related to package distribution failure, the method comprising:

receiving an error alert;

processing the error alert to create a subset of error data from the failure information including an identification of an affected one of the network devices;

determining whether the error alert was generated due to an operating status of the identified network device or due to a fault in one of the communication pathways by remotely performing a diagnostic test on the identified network device;

based on the determining, performing diagnostics on the identified network device or the communication pathway that caused generation of the error alert; and

creating a job ticket to initiate device or network service, wherein the job ticket includes at least a portion of the failure information from the error alert and information gathered in the diagnostics performing.

2. The method of claim 1, wherein the determining includes running Packet Internet Groper (PING) on an IP address on a first side of the identified network device and on an IP address on a second side of the identified network device.

3. The method of claim 1, wherein the error alert was generated due to a fault in one of the communication pathways, and the method further including determining a

last accessible IP address in the communication pathway,  
5 incrementing a fault count for the last accessible IP  
address, and determining whether the incremented fault  
count exceeds a threshold, wherein the job ticket  
creating is only performed when the threshold is  
exceeded.

4. The method of claim 1, wherein the error alert was generated due to an operating status of the identified network device and wherein the diagnostics performing includes performing a series of device-oriented tests.

5. The method of claim 4, wherein the job ticket creating is performed only when each of the series of device-oriented tests indicates the identified network device is faulting and wherein the series includes running Packet Internet Groper (PING) on the identified network device, running rcp on the identified network device, and running Traceroute software to analyze network connections to the identified network device.

6. The method of claim 4, wherein the method further includes determining whether the identified network device is included on an outage list, and further wherein the job ticket creating is not completed when the identified network device is determined to be included on the outage list.

7. The method of claim 1, further including providing a display on a user interface of a portion of the subset of error data from the error alert processing and status of the job ticket creating.

8. The method of claim 7, wherein when the error alert was generated due to a fault in one of the

communication pathways, at least periodically checking  
the communication pathway that caused the generation of  
5 the error alert for faults, and wherein results of the  
checking are included in the display on the user  
interface.

9. A service monitoring method, comprising:

receiving an error alert for a device in a computer  
network, wherein the error alert includes identification  
and network location information for the device;

5 creating a check engine to at least periodically  
transmit a signal to the device to determine if the  
device is active; and

when the check engine determines the device is  
active, transmitting a device active message to a user  
10 interface for display.

10. The method of claim 9, further including  
determining a down time for the device based on  
information gathered by the check engine and transmitting  
the down time to the user interface for display.

11. The method of claim 9, wherein the check engine  
includes running Packet Internet Groper (PING) on the  
device to identify when the device becomes active.

12. The method of claim 9, further including prior  
to the creating, determining a last accessible IP address  
in the computer network upstream of the device,  
incrementing a fault count for the determined last  
5 accessible IP address, comparing the fault count with a  
fault threshold, and when the comparing indicates the  
fault count exceeds the fault threshold, issuing a job  
ticket to a maintenance center associated with the  
device.

13. The method of claim 12, further including prior to the job ticket issuing, performing diagnostic tests on the device and computer network, wherein information gathered in the performing is included in the issued job ticket.

14. A method for responding monitoring operation and maintenance of communication pathways and network devices in a computer network, comprising:

receiving an error alert from one of the network devices;

processing the error alert to retrieve a set of service information including identification of an affected one of the network devices;

determining a maintenance center corresponding to the identified network device based on the retrieved service information;

selecting and retrieving a job ticket template based on the service information;

creating a job ticket for the identified network device by combining the retrieved job ticket template and at least a portion of the service information; and

transmitting the created job ticket to the corresponding maintenance center.

15. The method of claim 14, including when the transmitting is unsuccessful, repeating the transmitting a predetermined number of times over a set period of time.

16. The method of claim 14, including after the transmitting, receiving the transmitted job ticket from the corresponding maintenance center with an error and further including modifying the transmitted job ticket

5 based on the error and repeating the transmitting with the modified job ticket.

17. The method of claim 16, wherein the selected job ticket template comprises data fields and the job ticket creating comprises selecting portions of the service information and inserting the selected portions  
5 in the data fields and wherein the modifying based on the error comprises altering the inserted selected portions.

18. The method of claim 14, further including periodically transmitting a job ticket status message to a monitoring center and displaying a portion of the job ticket status message in a user interface.

19. A service support system for at least partially automatically processing error alerts created in a distributed computer network in response to a failure during distribution of a software package to network  
5 devices and for selectively creating and issuing job tickets to correct the failure, comprising:

a memory device for storing diagnostics for communication pathways and for network devices;

a monitoring tool in communication with the network  
10 devices to receive the error alerts and with the memory device to access the diagnostics, wherein the monitoring tool is configured to process each of the error alerts to parse service information, to determine if the failure is caused by a fault in one of the communication pathways or  
15 by a operation problem at one of the network devices and to select and remotely perform select ones of the diagnostics based on the determination of the cause of the failure; and

a service ticket mechanism linked to the monitoring  
20 tool and configured for receiving a request for a job

ticket to initiate service for the determined cause of the failure and for processing the service information and diagnostic information collected by the monitoring tool to create and issue the requested job ticket.

20. The system of claim 19, wherein the monitoring tool is further configured to establish a check process when the request of a job ticket is based on a determination that the failure is caused by a fault in one of the communication pathways, the check process at least periodically sending a message on the one of the communication pathways when the one becomes active.

21. The system of claim 20, further including a user interface in communication with the monitoring tool and wherein the checking process is adapted to determine a length of time inactive for the one of the communication pathways and to transmit an active alert message to the user interface for display including the inactive length of time upon determining that the one is active.

22. The system of claim 19, wherein the memory device is further adapted for storing an outage listing comprising identification information for each of the network devices that are being serviced and wherein the service ticket tool is further operable to only create the job ticket after determining the identified network device is not on the outage listing.

23. The system of claim 19, wherein the memory device is further adapted for storing a device location information comprising a geographic location for each of the network devices and wherein the service ticket tool is further operable to compare location information included in the error alert with the geographic location

information in the device location information and to  
modify the included location information for use in  
creating the job ticket.

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